Water Quality
Supplement 5.4

Station #1: Temperature

Work Sheet

Background

Water temperature is the temperature of a body of water, such as a stream, river, pond, lake, well or drainage ditch, as it appears in nature. Water bodies can vary greatly in temperature, according to latitude, altitude, time of day, season, depth of water and many other variables. Water temperature is important because it plays a key role in chemical, biological and physical interactions within a body of water. For example, high temperature may be an indicator of increased plant production. The temperature of the water determines what aquatic plants and animals may be present, since all species have their natural limits of tolerance to upper and lower temperatures. Water temperature can therefore help us to understand what may be happening within the water body without directly measuring hundreds of different things within the body of water.

Procedure

- Following the steps in the *Water Temperature Procedure,* each member of the group should take a turn measuring the temperature of the same sample with the same thermometer. Make sure everyone in the group can read the thermometer. Compare your readings. Are they within 0.5^{o}C of each other? Why? Why not? If not, repeat this exercise with another water sample until you are obtaining readings within 0.5^{o}C of each other.
- With each member of the team using a different thermometer and following the steps in the *Water Temperature Procedure*, measure the temperature of a single water sample and compare your readings. Do you get readings within 0.5^{o}C of each other? Why? Why not? If not, your thermometers may need calibration.
- Following the steps in the *Water Temperature Procedure*, measure the temperatures of water from the hot and cold water taps, ice water and the water that has been standing in the bucket. List the things you checked and record the temperatures you obtained for them as per the example below.
- Discuss the range of measurements possible with each of the thermometers. Can you take temperatures below the freezing mark. Why? Why not? Can you take the temperature of boiling water with the thermometer provided? Why? Why not?

Student	Sample Tested	Temperature